IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): ~~Method according to claim 1, characterized in that~~A method to perform a cycle synchronization between interconnected sub-networks, in which a reference node connected to one of the sub-networks transmits a respective cycle time information to cycle masters of all other sub-networks at recurring time instants, and the cycle masters of all other sub-networks adjust their cycle time accordingly, an adjustment of the cycle time within a cycle master is performed by the following steps:

determining a first time interval (Δt_1, Δt_1') in-between two receptions of cycle time information from the reference node with an own clock[[,]];

determining a second time interval (Δt_2, Δt_2') in-between two corresponding transmissions of cycle time information from the reference node ~~on basis of~~ based on the received cycle time information[[,]];

comparing the first time interval (Δt_1, Δt_1') and the second time interval (Δt_2, Δt_2')[[,]]; and

adjusting the own cycle length according to the comparison result.

Claim 3 (Currently Amended): ~~Method~~ The method according to claim 2, ~~characterized in that~~ wherein the comparison of the first time interval (Δt_1, Δt_1') and the second tine interval (Δt_2, Δt_2') considers a preceding adjustment of the own cycle length.

Claim 4 (Currently Amended): ~~Method~~ The method according to claim 2, ~~characterized in that~~ wherein adjustment of the own cycle length within a cycle master is performed in a step-wise manner.

Claim 5 (Currently Amended): ~~Method~~ The method according to claim 2, ~~characterized in that~~ wherein the adjustment of the own cycle length within a cycle maser is performed by adjusting a local number of clocks within one cycle.

Claim 6 (Currently Amended): ~~Method~~ The method according to claim 5, ~~characterized in that~~ wherein the adjustment of the own cycle length within a cycle master is performed by setting the local number of clocks equal to an ideal number of clocks of one cycle in case the first time interval (Δt_1, Δt_1') and the second time interval (Δt_2, Δt_2') are identical, smaller than an ideal number of clocks of one cycle in case the first time interval (Δt_1, Δt_1') is smaller than the second time interval (Δt_2, Δt_2'), and larger than an ideal number of clocks in case the first time interval (Δt_1, Δt_1') is larger than the second time interval (Δt_2, Δt_2').

Claim 7 (Currently Amended): ~~Method~~ The method according to claim 6, ~~characterized in that~~ wherein a step-width to adjust the own cycle timer within a cycle master is set according to the difference of the first time interval (Δt_1, Δt_1') and the second time interval (Δt_2, Δt_2').

Claim 8 (Canceled).

Claim 9 (Currently Amended): ~~Method~~ The method according to claim [[8]] 2, ~~characterized in that~~ wherein the cycle time information transmitted by the reference node is a content of its cycle time register, and

the adjustment of the own cycle time within a cycle master is performed by adjusting he average difference between a time interval of two transmissions of cycle time information of the reference node which is determined by subtracting two succeeding received contents of the cycle time register of the reference node and a time interval of two samplings of the own cycle timer which is determined by subtracting two succeeding sampled contents of the own cycle time register plus a corrective difference to be zero.

Claim 10 (Currently Amended): ~~Method~~ The method according to claim 9, characterized in that the corrective difference corresponds to the preceding adjustment.

Claims 11-33 (Canceled).

Claim 34 (Previously Presented): A device for performing cycle synchronization in networks including a plurality of local networks in which at least there are a reference node and cycle masters which are connecting to said local networks respectively, the device comprising:

means for receiving reference cycle time information supplied from said reference node and local cycle time information stored in a register of said cycle master connected to said local network;

means for detecting a difference between said reference cycle time information and local cycle time information; and

means for adjusting counter value of said register based on the detected difference in order to perform said cycle synchronization so that the counter value is selected from ternary values consisting of high, middle and low, wherein said the adjustment of the center value is limited to +/- 1 value and the adjustment is only allowed to jump between middle and high or between middle to low.